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February 17, 2010

Joseph F. LeMay, P.E.
Office of Site Remediation and Restoration
USEPA Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Re: Response to USEPA December 18, 2009 review comments regarding UniFirst's IAQA/VI Scope of Work, dated October 9, 2009

Dear Mr. LeMay:

This letter and its attachments are provided on behalf of UniFirst Corporation (UniFirst) in response to comments provided by the United States Environmental Protection Agency Region 1 (USEPA) in a letter dated December 18, 2009 (Comment Letter) and at our meeting at USEPA on January 21, 2010 regarding the *Indoor Air Quality and Vapor Intrusion Assessment Scope of Work* (SOW) for the UniFirst Source Area Property (the Property; 15 Olympia Avenue, Woburn, MA). The SOW proposed the collection of sub-slab vapor, indoor air, and ambient outdoor air samples to assess vapor intrusion and indoor air quality within the storage facility building on the Property, as well as collection of groundwater samples to evaluate VOC concentrations at the water table using existing unconsolidated deposit wells on the Property.

In principal part, USEPA proposed the following changes be made to the SOW:

- Addition and relocation of sub-slab and indoor sampling locations inside the storage facility building;
- Expansion of the analyte compound list and use of methods of analysis with lower detection limits;
- Expansion of on-Property shallow groundwater monitoring locations to include all monitoring wells situated on the east side of the Property;
- Coordination of water-level measurement and groundwater sampling in on-Property water table wells with the initial vapor intrusion assessment work proposed in the *Vapor Intrusion Assessment Work Plan* (VIA Work Plan) that UniFirst and W.R. Grace and Co.—Conn. ("Grace") submitted to USEPA on October 9, 2009; and
- Completion of two rounds of sampling to evaluate vapor intrusion within the storage facility building, one during frozen ground conditions and a second during summer conditions.

Below, we provide responses to these and other comments made in the Comment Letter and at the January 21, 2010 meeting, including relocation of one sub-slab and indoor sampling location nearer to the former emblem room. A revised SOW for collection of sub-slab vapor and indoor air data (Revised IAQA/VI SOW) and an associated IAQA/VI Sampling Quality Assurance Project Plan (QAPP) are attached.

Separately, UniFirst is working with Grace to develop a Revised VIA Work Plan and QAPP for well integrity testing, water-level measurement, and groundwater sampling from the on-Property and off-

Property water table wells (Revised VIA Work Plan). This Revised VIA Work Plan and associated QAPP will be submitted to USEPA under separate cover. Assuming timely review and approval of the Revised IAQA/VI SOW and IAQA/VI Sampling QAPP, UniFirst anticipates conducting an initial round of sub-slab vapor and indoor air sampling during frozen ground conditions in early March 2010. The schedule for groundwater sampling will be determined in future discussions with USEPA concerning the Revised VIA Work Plan.

RESPONSES TO COMMENTS

COMMENT 1: Page 8, Section 5. All building doors and windows should be closed 24 hours before testing and during testing within the building. Please also provide a complete description on how the ventilation system normally operates within the building during the seasons targeted for sampling including the various zones of ventilation within the building and number of air exchanges within these zones/building.

RESPONSE: The storage facility is open to the public between 8:00 AM and 5:30 PM Monday through Saturday, and 10 AM to 2 PM on Sunday; thus, the storage facility building cannot be closed for 24 hours before sample collection. As stated in the SOW, sample collection will be conducted outside of storage facility business hours, i.e., on a Sunday evening. To the extent possible, building windows and doors will be kept closed during sample collection. During the winter heating season, the building is heated using approximately 12 ceiling-suspended, thermostat-controlled natural gas heaters. Based on our current knowledge, the building does not have an air cooling or ventilation system; this information will be confirmed during the pre-sampling building inspection and any new information will be provided to USEPA.

COMMENT 2: Page 8, Section 5; and Figure 4. Additional sub-slab soil gas and indoor air sampling locations are proposed for the following locations:

- Adding an additional sampling location in the office space area for helping assess potential current risk to workers and potential vapor intrusion pathways including along the sewer lines. USEPA has observed that utilities entering buildings can serve as vapor pathways subsurface pathways. It is suggested that the sample be collected from the bathroom or hallway next to the bathroom door (with the bathroom doors remaining open). See the attached figure for the additional SV location along the north side of the office area;
- Adding an additional sampling location in the pump room for helping assess potential risk and potential vapor intrusion pathways including along the water line/ utilities (e.g. UC-22 extraction water line. USEPA has observed that utilities entering buildings can serve as vapor pathways subsurface pathways. The waterline was excavated through an area with high voc contamination and may be a migration pathway to the building. See the attached figure for the additional SV location in the pump room;
- Adding two additional sampling locations, the first by UC35 (highest previous PCE soil concentration (3,400 ug/kg) under the building foundation) and the second by UC32 (near highest PCE soil concentrations (120,000 ug/kg) at TPI and TPM). USEPA suggests relocating SV-13 and SV-12 to the UC35 and UC32 areas. See the attached figure for the additional SV locations (including the relocation of SV-12 and SV-13 to nearby UC-35 and UC-32.

RESPONSE: The following sub-slab vapor and indoor air sampling points will be added or relocated:

- *Sampling location SV-14 will be added along the north side of the office area, as shown on TRC Figure 1: Proposed Sampling Point Relocations (attached to the Comment Letter);*
- *Sampling location SV-15 will be added in the pump room, as shown on TRC Figure 1; and*
- *Sampling locations SV-13 and SV-12 will be relocated to the UC35 and UC32 areas, as shown on TRC Figure 1.*

These sampling point additions and relocations are reflected on Figure 4 of the attached Revised IAQA/VI SOW.

COMMENT 3: Page 8, Section 5; and Figure 4. EPA proposes adjusting the location of SV-02 approximately 25' north along the ally, and adjusting the location of SV-09 approximately 25' northwest along the ally. See attached figure for adjusted locations of SV-02 and SV-09.

RESPONSE: Proposed sampling locations SV-02 and SV-09 will be modified per TRC Figure 1. These sampling point relocations are reflected on Figure 4 of the attached Revised IAQA/VI SOW. Additionally, in response to a request that USEPA made at the January 21, 2010 meeting, sub-slab vapor and indoor air sampling location SV-04 has been moved approximately 70 feet west of its originally proposed location, toward the former "emblem room" area, as shown on Figure 4 of the attached Revised IAQA/VI SOW.

COMMENT 4: Page 8, Section 5; and Figure 4. The "pump room" identified on Figure 4 is the location of the treatment facility for the pump and treat system on the property. The water line transporting water from extraction well UC22 to the pump room was excavated through an area with high VOC concentrations. As outlined in comment # 2, EPA recommends an additional SV sample be located in the pump room to help assess potential risk and potential vapor intrusion pathways. In addition, data collected from the pump room may also provide an understanding if contamination in the pump room may be interfering with other nearby SV sample locations (e.g., SV-10, SV-07).

RESPONSE: Sub-slab sampling location SV-15 will be added in the pump room, as shown on TRC Figure 1. This sampling point addition is reflected on Figure 4 of the attached Revised IAQA/VI SOW.

COMMENT 5: Page 8, Section 5 - 5th bullet; and Figure 4. Water level measurements and shallow groundwater samples shall also be collected from monitoring wells along the eastern boundary of the property, including monitoring well locations UC4, UC5, UC8, UC16, UC17, UC20, UC27 and UC28. Note: the water table elevation on the eastside of the property may be within shallow bedrock because the overburden in this area is very shallow.

RESPONSE: On-Property wells UC4, UC5, UC8, UC16, UC17, and UC20 were last sampled in 1993; these wells will be redeveloped and integrity tested prior to sampling. UC27 and UC28 are soil boring locations, not monitoring wells; therefore, groundwater will not be sampled at these two locations. The methodology for redevelopment, integrity testing, water-level measurement, and groundwater sampling of wells will be described in the Revised VIA Work Plan and associated QAPP. Water-level measurement

and groundwater sampling of on-Property wells will be coordinated with work to be conducted under the Revised VIA Work Plan and the annual groundwater monitoring plan.

COMMENT 6: Page 7, Section 5, Chemicals of Concern. Section 5.0 proposes a limited suite of compounds for analysis as part of this effort. EPA desires comprehensive analysis based on volatile compounds detected during historical data collection at the property. In addition to those compounds listed in Table 1, the following volatile organic compounds (VOCs) have been detected in UniFirst monitoring wells and warrant consideration:

- 1,1,2,2-tetrachloroethane
- 1,1,2-trichloroethane
- 1,1-dichloroethene
- 1,2,4-trimethylbenzene
- 1,2-dibromoethane
- 1,2-dichloropropene
- 1,3,5-trimethylbenzene
- 2-butanone
- 2-hexanone
- 4-methyl-2-pentanone
- acetone
- benzene
- bromoform
- bromomethane
- carbon disulfide
- carbon tetrachloride
- chlorobenzene
- chloroethane
- dibromochloromethane
- ethylbenzene
- isopropylbenzene
- meta- & para-xylenes
- ortho-xylene
- xylenes (total)
- methylene chloride
- n-Propylbenzene
- styrene
- toluene
- trans-1,3-dichloropropene

RESPONSE: The following additional analytes for sub-slab vapor and indoor air samples have been added to Table 1 of the attached Revised IAQA/VI SOW:

- 1,2-dibromoethane
- benzene
- bromoform
- carbon tetrachloride
- ethylbenzene
- isopropylbenzene
- meta- & para-xylenes
- ortho-xylene
- xylenes (total)
- methylene chloride
- toluene
- trans-1,3-dichloropropene

Table 1 of the attached Revised IAQA/VI SOW contains the revised analyte list for indoor air and sub-slab vapor. The analyte list for indoor air includes all analytes proposed for groundwater samples collected as part of the Revised VIA Work Plan. Consistent with Comment 9 in the Comment Letter, additional air-phase petroleum hydrocarbon analytes were added for soil vapor (see Comment 9 response). Each VOC listed in Comment 6 was evaluated for inclusion in Table 1. Compounds detected only once or twice in many hundreds of groundwater samples collected historically from UniFirst and Grace wells, or for which all detections in groundwater were below the "Groundwater VI Screening Criteria" proposed in Comment 33, were not included as analytes. Further explanation regarding the methodology used for selecting appropriate analytes will be provided to USEPA in the Revised VIA Work Plan. Responses to EPA's proposed Groundwater VI Screening Criteria will be provided below in response to Comment 33 and with the Revised VIA Work Plan.

COMMENT 7: Section 5, Detection Limits for Ambient Air and Soil Gas Sampling. Clarify the detection limits for soil gas and ambient air sampling. The air detection limits should be less than the Oak Ridge National Laboratory (ORNL) residential air screening levels, adjusted to a Hazard Quotient (HQ) of 0.1 for non-carcinogens and as reported for carcinogens. For compounds labeled with a "**" on the ORNL Regional Screening Level Table, the noncancer and cancer values are within 10-fold of each other. For these compounds, the background table that provides both the noncancer and cancer values should be consulted to determine whether the noncancer value adjusted downward by 10-fold is lower than the cancer value. The lower of the two values (HQ=0.1 or ILCR=1E-06) should be selected as the screening level. See comment 33 and the attached vapor intrusion screening criteria table for air and groundwater. Note: For compounds on the table where "no value available" is denoted, their detection limits should be 0.5 ug/m^3 and 0.5 ug/L.

RESPONSE: Table 1 of the Revised IAQA/VI SOW has been revised to include the laboratory analytical method and target reporting limit for each constituent in the expanded analyte list (see Comment 6 and 9 responses).

UniFirst is aware of the ORNL screening levels, which are named the Regional Screening Levels (RSLs). ORNL maintains the website where the RSLs reside, under contract from EPA. The RSLs replace the

Regions III, VI, and IX tables. The RSLs can be found at http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm.
UniFirst disagrees that indoor air samples in a commercial building should be compared to RSLs for residential air. Nor should air detection limits be based on RSLs for residential air. Instead, RSLs for industrial air from the same tables are appropriate due to the current and reasonably foreseeable future use of the on-Property building.

USEPA further states that RSLs based on non-carcinogenic effects should be decreased by a factor of 10 so that they are based on a Hazard Quotient of 0.1. According to the December 2009 Users Guide that can be found on the above website, USEPA states that RSLs based on non-carcinogenic effects should be based on a Hazard Quotient of 1.0. Specifically, USEPA states: "The Supporting Tables provide SLs corresponding to a 10^{-6} risk level for carcinogens and an HQ of 1 for noncarcinogens. Site specific SLs corresponding to an HQ of less than 1 may be appropriate for those sites where multiple chemicals are present that have RfDs or RfCs based on the same toxic endpoint." UniFirst is thus puzzled as to why USEPA's comments on the draft IAQA/VI SOW state that screening levels for chemical constituents based on non-carcinogenic effects should be based on a Hazard Quotient of 0.1. USEPA's comment implies that for each constituent on the chemicals of potential concern list, there are nine other chemicals on the list with RfCs based on the same toxic endpoint. Clearly, this is not the case.

In addition, the Comment Letter states that "EPA vapor intrusion screening criteria" are based on a Hazard Quotient (HQ) of 0.1. The only USEPA vapor intrusion screening criteria that UniFirst is aware of are those cited in USEPA's OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance) (EPA, 2002). While UniFirst is aware that work is currently underway to finalize this document, the most recent published USEPA criteria are listed in this 2002 document, and they are based explicitly on a HQ of 1.0, not 0.1.

Thus, UniFirst disagrees that the non-carcinogenic RSLs, which are used widely by USEPA Regions and state regulators, need to be decreased by a factor of 10 with an untested assumption that all chemicals of potential concern have RfCs that are based on the same toxic endpoint as nine other chemicals.

UniFirst suggests that a more toxicologically appropriate approach to setting detection limits for constituents of potential concern would be to either use the RSL as listed on the USEPA website or to assess the RSLs for the constituents of potential concern to determine which, if any, might need to be decreased using a toxic endpoint-specific analysis.

We have evaluated all of the RfCs that were used by USEPA to set the RSLs to determine their toxic endpoint and to determine how many chemicals had the same toxic endpoint as other chemicals of potential concern listed by USEPA in the Comment Letter. As noted below, of the six chemicals of potential concern that have RSLs derived for non-carcinogenic effects, five could justifiably be reduced by dividing the RSL by 3. The remaining RSL (for isopropylbenzene) should not be reduced by dividing the RSL. Proposed screening levels based on the toxicological approach described above are included in Table 1 for each analyte.

COMMENT 8: Section 5, Data Validation. Clarify the details of data validation. See related comments regarding data validation in Section 6.

RESPONSE: A Region 1 Tier III data validation will be applied to the IAQA/VI sampling data. Data validation methodology details are clarified in the attached Revised IAQA/VI SOW and associated QAPP.

COMMENT 9: Section 5, Expand Analytical Program. Air phase petroleum hydrocarbons (APH) should be added to the analytical program for the soil gas samples since UniFirst reported "waste-oil contaminants" released on the property.

RESPONSE: APH compounds with published RSLs are included as sub-slab vapor analytes in Table 1 of the Revised IAQA/VI SOW. The following APH compounds were added as indoor air and sub-slab vapor analytes based on Comments 6 and 9:

- benzene
- toluene
- ethylbenzene
- xylenes (total)
- naphthalene

The following additional APH compounds were added as sub-slab vapor analytes based on Comment 9:

- methyl tert-butyl ether (MTBE)
- 1,3-butadiene

COMMENT 10: Section 5, Well Integrity. Wells with insufficient integrity will need to be restored to working order or replaced and kept in the sampling program. Related integrity testing conducted for the parallel investigation conducted in the neighborhood area and the nearby office park includes slug testing to confirm the hydraulic connection of the wells to the saturated unconsolidated deposits. This information may be useful for determining if the wells need to be re-developed.

RESPONSE: The wells shown on Figure 4 of the Revised IAQA/VI SOW will be redeveloped and integrity tested prior to sampling. Integrity testing will include slug testing to confirm hydraulic connection of the wells to the saturated unconsolidated deposits. The methodology for redevelopment, integrity testing, water-level measurement, and groundwater sampling will be described in the Revised VIA Work Plan and associated QAPP, to be submitted to USEPA under separate cover. Wells identified as non-sampleable, if any, will be identified to USEPA following integrity testing, but will not be restored, given that these well locations were chosen in the past for purposes other than vapor intrusion assessment, and the purposes for which the wells historically were installed already have been met.

COMMENT 11: Section 5, Passive Diffusion Bag (PDB) Sampling.

- **Representativeness.** The text suggested that diffusion samplers would be deployed at a depth up to one foot below the water table. The diffusion sampler may be in place for a three week period or longer. It is recommended that diffusion samplers, and any other deployed sampling device, be consistently located within a vertical elevation that will receive free flowing groundwater from the adjacent well screen close to the water table without concern for water table fluctuations

where the water level may drop and partially expose the sampling device to non-free flowing conditions and/or air. It is suggested that the diffusion bag samplers be situated at a greater depth below the water table so the samples remain within the free flowing groundwater conditions by the water table (e.g., 2'-3' below the water table). The vertical location of the sampling device should be consistently applied to monitoring wells throughout the study area.

Otherwise, deploying the PDB within the top foot of the groundwater table may lead to a result that is biased low. With the sampler installed close to the water surface, over the two to three week period wherein the sampler is deployed, the water table may fall below the installation depth of the PDB, potentially exposing the sampler to the air within the well casing. In addition, the water at that depth may be equilibrated with column of air within the well, rather than the reduced pore area of the adjacent formation. The PDB should be installed at a depth that guards against water table fluctuations and localized air/water equilibrium affects. If a sampler is to be installed within the top foot of the water column, then additional PDB samplers should be deployed below the sampler to evaluate potential concentration bias. Please apply the USGS's "User's Guide for Polyethylene-Based Passive Diffusion Samplers to Obtain Volatile Organic Compound Concentrations in Wells" for the proposed VI SOW groundwater sampling program. A copy of the USGS user guide can be found at the following link - http://costperformance.org/pdf/wrir014060.pdf

- **Proximity to screen interval.** Provide a table that summarizes the wells proposed for sampling, surface elevation (where installed), measured groundwater elevation range, screen interval elevations, and formation screened. Also indicated the proposed installation elevation of the PDB sampler. Following the proposed installation scheme, if the PDB becomes located above the screened interval (in the potentially stagnant water column), then the depth of PDB placement should be adjusted to have the PDB placed within the screened interval where groundwater freely flows through the screen.

RESPONSE: Given USEPA concerns, it is anticipated that groundwater sampling of on-Property and off-Property groundwater monitoring wells may be conducted using a low-flow sampling methodology. The methodology to be used will be described in the Revised VIA Work Plan and associated QAPP, to be submitted to USEPA under separate cover. A tabular summary of the on-Property wells proposed for sampling, measuring point elevation, screen interval elevations, formation screened, and the April 2009 groundwater elevation is included as Table 2 of the attached Revised IAQA/VI SOW.

COMMENT 12: Section 5, Certified Analytical Laboratories. Section 5.0 mentions that samples will be sent to a "certified" analytical laboratory. Clarify by whom and for what the laboratories will be certified.

RESPONSE: Sub-slab vapor, indoor air, and outdoor ambient air samples will be sent to Air Toxics, Ltd. of Folsom, California for analysis. Air Toxics, Ltd. is National Environmental Laboratory Accreditation Conference (NELAC) accredited, and its Quality Assurance program and Laboratory Quality Assurance Manual comply with NELAC standards.

COMMENT 13: Section 5, Sub-Slab and Indoor Air Summa Canister Sampling SOPs: EPA Region 1 uses the attached Standard Operating Procedures (SOP) for "Canister Sampling" dated August 31, 2007. Please use this SOP as a guide. Please also provide a copy of your sampling SOPs with the resubmission of the VI SOW.

RESPONSE: SOPs for sub-slab vapor and indoor air sampling are included with the attached IAQA/VI Sampling QAPP.

COMMENT 14: Section 5, Sub-Slab SOP: The proposed sub-slab soil gas sampling procedures should include the following:

- a purge volume of three to five internal volumes of tubing/probe should be removed prior to sampling;
- place a small amount of modeling clay around the stainless steel tubing adjacent to the Swagelok nut, which connects the stainless steel tubing to the female connector. Use a sufficient amount of clay so that the completed probe, when placed in the outer hole, will create a seal between the outer hole and inner hole. The clay seal will prevent any anchoring cement from flowing into the inner hole during the final step of the probe installation and also help prevent indoor air from diluting the soil gas sample. Please also provide a copy of your sampling SOPs with the resubmission of the VI SOW.

RESPONSE: An SOP for sub-slab vapor sampling is included with the attached IAQA/VI Sampling QAPP. The SOP specifies a pre-sampling purge volume of three to five internal volumes of the sampling tubing and probe. The attached SOP also describes the procedure for creating a seal between the outer and inner holes using Virginia Kmp PP-22 Sealing Gum, or equivalent, a product similar to modeling clay in consistency and utility that is appropriate for sub-slab vapor sampling applications (New York State Department of Health, Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006).

COMMENT 15: Page 9, Section 5, ASTM Procedure. The ASTM method identified in the text is outdated and has been superseded by ASTM D-5466-01(2007).

RESPONSE: ASTM D-5466-01 (2007) is referenced in the attached Revised IAQA/VI SOW.

COMMENT 16: Page 11, Section 5, Composite Sub-Slab Sampling. The collection of an 8-hour composite sample for sub-slab vapor samples does not appear to be appropriate. Samples of this kind are typically collected at 200 milliliters per minute (mL/min) until the canister is filled. It is not necessary to obtain "time weighted average" samples of sub slab soil gases. However, care should be exercised to avoid sampling at too high a rate or via too high a vacuum, as this can lead to short-circuiting. The California EPA and US EPA recommend a maximum sampling rate of 0.1 to 0.2 Liters/minute. Empirical and mathematical evaluations of "purge volume" concerns indicate that pre-evacuation of 5 probe volumes should suffice. The proposed pre-evaluation of 3 probe volumes appears appropriate.

RESPONSE: The sample collection methodology is clarified in the attached Revised IAQA/VI SOW. Vapor samples will be collected in 6-Liter Summa® canisters using a target sampling rate of 0.1 to 0.2

Liters/minute (or 100 to 200 milliliters per minute), resulting in an estimated sample collection time of approximately one hour or less.

COMMENT 17: Section 5, Groundwater Sampling - 1,4-Dioxane Analysis. Clarify that groundwater analysis includes 1,4-dioxane due to the elevated concentrations and historical releases of 1,1,1-trichloroethane at the UniFirst property. In addition, see above comment regarding chemicals of concern.

RESPONSE: 1,4-dioxane has a very low Henry's Constant and is miscible in water. It does not pose a vapor intrusion concern. USEPA in fact has not listed 1,4-dioxane as a "Compound of Concern" for indoor air (see USEPA Comment 33). Therefore, this constituent will not be added to the vapor analyte list for this scope of work. USEPA's request that 1,4-dioxane be included in groundwater analysis will be addressed in connection with submittal of the Revised VIA Work Plan and associated QAPP.

COMMENT 18: References. One of the cited references is out of date (USEPA 2002b; Region 9 PRGs) and should be updated in the text (Section 6, page 16, last paragraph) to reference the ORNL screening values. The ORNL regional screening level table was most recently updated in May 2009 (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm).

RESPONSE: See responses to Comments 6, 7, 9 and 33. .

COMMENT 19: Page 9, Section 5. It is strongly recommended that the inside and outside building be thoroughly visually inspected, documented, and assessed for chemical storage areas that could interfere with indoor air sampling results. Chemical storage areas identified may also be further evaluated with PID (although this information will not provide any chemical specific information). Chemicals identified within chemical storage areas may be temporarily removed from the building prior to sampling.

RESPONSE: Prior to conducting the IAQA/VI sampling, The Johnson Company will perform two visual building inspections and PID screenings of readily accessible areas of the on-Property building (i.e., all proposed sampling locations, corridors, office space, bathrooms, and the pump room) to identify and document any conditions that could interfere with the indoor air sampling results. This pre-sampling task has been added to the attached Revised IAQA/VI SOW. The Johnson Company will not be entering individual storage units rented to storage facility customers.

COMMENT 20: Page 9, Section 5. How will predominant outdoor air direction be determined and monitored prior to and during sampling?

RESPONSE: The methodology for determining and monitoring outdoor air direction prior to and during sampling has been clarified in the Revised IAQA/VI SOW. On the day of sampling, the forecasted wind direction will be recorded and a handheld digital anemometer with wind direction capability will be used to verify wind direction at each outdoor air sampling location. One downwind and two upwind locations will be monitored over a 30 minute interval to select the most appropriate sampling locations. Wind direction will be logged at the beginning and end of sample collection at each outdoor sampling location.

COMMENT 21: Page 10 and 11, Section 5. Cracks between floors and walls may have developed over time and caused some floor separation from the walls. These cracks, and other significant floor cracks,

should be monitored with PID to evaluate potential locations of interest where VOCs may be entering the building.

RESPONSE: Prior to conducting the IAQA/VI sampling, The Johnson Company will perform PID screening of cracks between floors and walls and other significant floor cracks, if any, that are visible in readily accessible areas of the on-Property building (i.e., all proposed sampling locations, corridors, office space, bathrooms, and the pump room). This task has been added to the attached Revised IAQA/VI SOW.

COMMENT 22: Page 10, Section 5. As appropriate, final sub-slab and indoor air sampling locations may be adjusted prior to sampling. EPA shall review all field results and recommendations for adjusting sample locations along with UniFirst and/or Johnston Company Representatives prior to sample collection. EPA should be notified of building inspection schedule at least 1 week prior to inspection.

RESPONSE: USEPA will be notified of the final, pre-sampling building inspection schedule at least 1 week prior to inspection.

COMMENT 23: Page 10, Section 5. The parties proposed approach for determining a successful seal is < 20% of tracer gas detected with handheld meter. This percentage appears unacceptably high. Recent research from EPA ORD on the matter of leakage suggests </= 1% of the tracer gas detected is more appropriate for determining a successful seal.

RESPONSE: The criterion for determining a successful seal using tracer gas has been clarified in the attached Revised IAQA/VI SOW. The cited leakage criterion for a successful sub-slab vapor probe seal is less than or equal to 1 percent (≤1%), or 10,000 parts per million [ppm]) of the tracer gas, specified as helium in the attached Revised IAQA/VI SOW.

COMMENT 24: Page 11, Section 5. The SOW and EPA's comments are focused on sub-slab and indoor air conditions within the building footprint, and suggests that the proposed SV-12 and SV-13 be relocated within the building foot print by historical sampling locations UC-35 and UC-32 (see attached figure). EPA expects future plans will be provided for further characterizing the extent of soil contamination on the property and properly designing a soil remedy to achieve ROD and Consent Decree soil cleanup levels.

RESPONSE: Sampling locations SV-13 and SV-12 will be relocated to the UC35 and UC32 areas, as requested by USEPA and shown on TRC Figure 1. These sampling point relocations are reflected on Figure 4 of the attached Revised IAQA/VI SOW. UniFirst understands that discussions concerning the soil remedy and the Summary of Unconsolidated-Deposits Investigations at the UniFirst Property, Woburn, Massachusetts (Applied Groundwater Research Ltd. and Environmental Project Control, Inc. 1994) will continue at a later date.

COMMENT 25: Page 11, Section 5. In Section 5.0, under Sub-Slab Vapor Assessment, the fifth paragraph identifies a duplicate sample will be collected at two of the sub-slab vapor monitoring points. The procedure used to collect the duplicate sample needs to be provided.

RESPONSE: The procedure for collection of field duplicate (or replicate) samples is provided in the attached Revised IAQA/VI SOW. At each proposed replicate sample location, one original and one replicate sample will be collected simultaneously from the same sub-slab vapor probe using a laboratory-supplied T-connection off the vapor probe outlet and the same flow controller settings.

COMMENT 26: Page 12, Section 5. As noted in a prior comment, the groundwater table should be monitored in the shallow bedrock monitoring wells along the eastern portion of the property (UC4, UC5, UC8, UC16, UC17, UC20, UC27 and UC28).

RESPONSE: See above response to Comment 5.

COMMENT 27: Page 12, Section 5. The snap sampler web page states, "Academic research, EPA, and ASTM guidance indicates flow-through in the well screen is normal and usual." In most circumstances truly "stagnant" water is present only in blank well casing above the screen. The screen interval inside the well normally contains free flowing formation water." According to the Interstate Technology Regulatory Council, Passive Diffusion Bag (PDB) samplers "rely on the free movement of groundwater from the aquifer or water bearing zone through the well screen." Please inventory and identify the vertical elevation of the well screen, water table and the elevation the proposed sample will be collected from. Please ensure that all samples are collected from free flowing water and representative of current aquifer conditions. If the sample is collected from a location above the well screen, then the sample may not be representative of free flowing water from the aquifer by the water table. For these locations, it may be appropriate to install new monitoring wells where the screen interval intersects the water table level and the interval targeted for sampling. Otherwise, the samples should be collected from an appropriate elevation within the screened interval where the water is free flowing from the aquifer.

RESPONSE: As indicated above in response, for example, to Comment 11, Grace and UniFirst will develop a consistent methodology for groundwater sampling of on-Property and off-Property wells, which will be described in the Revised VIA Work Plan and associated QAPP, to be submitted to USEPA under separate cover. A tabular summary of the on-Property wells proposed for sampling, measuring point elevation, screen interval elevations, formation screened, and groundwater elevation as measured in the April 2009 monitoring event is included as Table 2 of the attached Revised IAQA/VI SOW.

COMMENT 28: Page 12, Section 5. If at all possible, the groundwater sampling under this scope of work should be coordinated with and occur at the same time as the sampling proposed under the Vapor Intrusion Assessment Work Plan (shallow groundwater sampling from monitoring wells downgradient of the UniFirst and WR Grace Source Area Properties). In addition, the methodology for sampling existing monitoring wells under this SOW and the Vapor Intrusion Assessment Work Plan should be consistent.

RESPONSE: Scheduling of water-level measurement and groundwater sampling of on-Property wells will be coordinated with work to be conducted under the Revised VIA Work Plan and the annual groundwater monitoring plan. The groundwater sampling methodology will be described in the Revised VIA Work Plan and associated QAPP, to be submitted to USEPA under separate cover. (It should be noted that recovery wells have long been operating on the UniFirst and Grace properties as part of the approved source control remedies there, so the off-Property wells are not in fact "downgradient.")

COMMENT 29: Page 12, Section 5, Analytical Methods; and Section 6, Quantitation Limits. The VOC groundwater analyses by 8260 specified in Section 5 of the LTMP will not be satisfactory to achieve EPA's VI Screening criteria (provided herein). As per Section 6, Table 6-2, the Quantitation Limit (QL) for most VOCs is 2 micrograms per liter (ug/L); therefore, 8260B analysis using selective ion monitoring (SIM) will be needed for trans-1,2-dichloroethene, 1,2-dichloroethane, chloroform, vinyl chloride, and tetrachloroethene.

RESPONSE: The analytical method and target quantitation limits for target groundwater analytes will be specified in the Revised VIA Work Plan and associated QAPP, to be submitted to USEPA under separate cover. Responses to EPA's proposed VI Screening criteria are provided, in part, in response to Comment 33 below (as to indoor air screening values) and will be addressed further (as to groundwater screening concentrations) in connection with submittal of the Revised VIA Work Plan.

COMMENT 30: Page 12, Section 5. Groundwater, soil gas, and indoor/outdoor air samples should be analyzed for VOCs identified in Table 1, as well as any other VOCs that historically have been found on the property in groundwater and soil media which may contribute to potential vapor intrusion/ indoor air risks. See above comment regarding chemicals of concern and 1,4-dioxane.

RESPONSE: See above responses to Comments 6 and 17.

COMMENT 31: Section 6, Validation. The first paragraph in this section does not clearly state that data will be validated. If validation is intended (as indicated in the third paragraph in this section), then the guidelines that will be used should be cited here consistent with EPA Region 1 – New England data validation procedures. The level of validation that will be performed must also be cited.

RESPONSE: A Region 1 Tier III data validation will be applied to the IAQA/VI sampling data. Data validation methodology details are provided in the attached Revised IAQA/VI SOW and associated QAPP.

COMMENT 32: Section 6, Data Usability. The second paragraph states that the data set for the project will be considered useable if no more than 10-percent of the data are rejected. This is not an acceptable criterion for determining if the data are useable. There could also be low or high biases in the data that may not result in rejection of the data, but will result in the inability to achieve the project objectives. Also, even if less than 10-percent of the data are rejected, the data points which are rejected may be critical to achieving the project objectives. Therefore, this general usability statement is not accurate.

RESPONSE: Data quality objectives have been clarified in the attached Revised IAQA/VI SOW and associated QAPP.

COMMENT 33: Section 6, Data Comparison/VI Screening Levels. EPA vapor intrusion screening criteria is based upon Incremental Life Cancer Risk (ILCR) of 1E-06 and Hazard Quotient (HQ) of 0.1. The table provided below includes the VI Screening Criteria (ug/L) for each volatile organic compound (VOC) of interest based upon ILCR equivalent to 1E-06 or HQ equivalent to 0.1, which shall be used for this initial vapor intrusion study. Selective Ion Monitoring (SIM) analysis will likely be required for

trans-1,2-dichloroethene, 1,2-dichloroethane, chloroform, vinyl chloride, and tetrachloroethene to achieve the tabulated VI Screening Criteria.

Compound of Interest	Indoor Air VI Screening Criteria (ug/m^3)	Basis of Screening Criteria	Groundwater VI Screening Criteria (ug/L)	Basis of Screening Criteria
Chloroform	1.1E-01	ILCR = 1E-06	0.705	ILCR = 1E-06
1,1-Dichloroethane	1.5E+00	ILCR = 1E-06	6.61	ILCR = 1E-06
1,2-Dichloroethane	9.4E-02	ILCR = 1E-06	2.34	ILCR = 1E-06
1,1-Dichloroethene	2.1E+01	HQ = 0.1	19	HQ = 0.1
Tetrachloroethene	4.1E-01	ILCR = 1E-06	0.55	ILCR = 1E-06
Trichloroethene	1.2E+00	ILCR = 1E-06	2.89	ILCR = 1E-06
Vinyl chloride	1.6E-01	ILCR = 1E-06	0.32	ILCR = 1E-06
trans-1,2-Dichloroethene	6.3E+00	HQ = 0.1	18	HQ = 0.1
cis-1,2-Dichloroethene	No value available		21	HQ = 0.1
1,1,1-Trichloroethane	5.2E+02	HQ = 0.1	310	HQ = 0.1
Methylene chloride	5.2E+00	ILCR = 1E-06	58	ILCR = 1E-06
2-Butanone	5.2E+02	HQ = 0.1	44,000	HQ = 0.1
Acetone	3.2E+03	HQ = 0.1	22,000	HQ = 0.1
Carbon tetrachloride	1.6E-01	ILCR = 1E-06	0.135	ILCR = 1E-06
Carbon disulfide	7.3E+01	HQ = 0.1	56	HQ = 0.1
Xylenes	1E+01	HQ = 0.1	2,200	HQ = 0.1
Toluene	5.2E+02	HQ = 0.1	150	HQ = 0.1
Chlorobenzene	5.2E+00	HQ = 0.1	39	HQ = 0.1
Styrene	1.0E+02	HQ = 0.1	890	HQ = 0.1
1,1,2,2-Tetrachloroethane	4.2E-02	ILCR = 1E-06	3	ILCR = 1E-06
1,2-Dichloropropane	2.4E-01	ILCR = 1E-06	2.12	ILCR = 1E-06
n-Propylbenzene	No value available		32	HQ = 0.1
1,1,2-Trichloroethane	1.5E-01	ILCR = 1E-06	4.11	ILCR = 1E-06
1,2,4-Trimethylbenzene	0.73	HQ = 0.1	2.4	HQ = 0.1
1,3,5-Trimethylbenzene	0.63	HQ = 0.1	2.5	HQ = 0.1
1,2-Dibromoethane	4.1E-03	ILCR = 1E-06	0.36	ILCR = 1E-06
1,2-Dichloropropene	No value available		No value available	
2-Hexanone	3.1E+00	HQ = 0.1	787	HQ = 0.1
4-Methyl-2-pentanone	3.1E+02	HQ = 0.1	1,400	HQ = 0.1
Benzene	3.1E-01	ILCR = 1E-06	1.36	ILCR = 1E-06
Bromoform	2.2E+00	ILCR = 1E-06	0.0083	ILCR = 1E-06
Bromomethane	5.2E-01	HQ = 0.1	2	HQ = 0.1
Chloroethane	1E+03	HQ = 0.1	2,800	HQ = 0.1
Dibromochloromethane	9E-02	ILCR = 1E-06	3.2	ILCR = 1E-06

Compound of Interest	Indoor Air VI Screening Criteria (ug/m^3)	Basis of Screening Criteria	Groundwater VI Screening Criteria (ug/L)	Basis of Screening Criteria
Ethylbenzene	9.7E-01	ILCR = 1E-06	3.04	ILCR = 1E-06
Isopropylbenzene	4.2E+01	HQ = 0.1	0.84	HQ = 0.1
trans-1,3-Dichloropropene	No value available		0.84	ILCR = 1E-06
Naphthalene	7.2E-02	ILCR = 1E-06	3.98	ILCR = 1E-06
1,2-Dichlorobenzene	2.1E+01	HQ = 0.1	260	HQ = 0.1
1,3-Dichlorobenzene	No value available		No value available	
1,4-Dichlorobenzene	2.2E-01	ILCR = 1E-06	2.25	ILCR = 1E-06
Tetrahydrofuran	No value available		No value available	
Bromodichloromethane	6.6E-02	ILCR = 1E-06	2.1	ILCR = 1E-06

Notes:
ug/L – microgram per liter
ILCR – Incremental Lifetime Cancer Risk
HQ – Hazard Quotient

RESPONSE: See above response to Comment 7. Table 1 of the Revised IAQA/VI SOW has been revised to include the laboratory analytical method and target reporting limit for each constituent in the expanded analyte list (see Comment 6 response). Vapor sample analysis will be conducted using the TO-15 analytical method with SIM analysis as required to attain the target reporting limits specified in the QAPP.

UniFirst disagrees that indoor air samples in a commercial building should be compared to RSLs for residential air. Instead, RSLs for industrial *air from the same tables are appropriate due to the current and reasonably foreseeable future use of the UniFirst building. In addition, as noted above, UniFirst respectfully disagrees that the non-carcinogenic RSLs, which are used widely by USEPA Regions and state regulators, need to be decreased by a factor of 10 with an untested assumption that all chemicals have RfDs and RfCs that are based on the same toxic endpoint as nine other chemicals of potential concern.*

In addition, the Comment Letter states that "EPA vapor intrusion screening criteria" are based on a Hazard Quotient (HQ) of 0.1. The only USEPA vapor intrusion screening criteria that UniFirst is aware of are those cited in USEPA's OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance) (USEPA, 2002)[1]. While UniFirst is aware that work is currently underway to finalize this document, the most recent published USEPA criteria are listed in this 2002 document, and they are based explicitly on a HQ of 1.0, not 0.1. Accordingly, UniFirst suggests that a more toxicologically appropriate approach to defining site-specific RSLs for commercial/industrial air would be to either use the RSL as listed on the USEPA website or to assess the RSLs for the constituents of potential concern to determine which, if any, might need to be

[1] *USEPA, 2002. OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance). EPA530-D-02-004. November 2002.*

decreased using a toxic endpoint-specific analysis. As noted in the above responses, reduction of the Hazard Quotient goal of 1.0 should only occur for chemical substances for which RfCs are based on the same toxic endpoint as other chemicals of potential concern. The following table lists the non-carcinogenic toxic endpoints for the six chemicals for which the RSLs are based on USEPA-derived RfCs. Several chemicals of potential concern share toxic endpoints with other chemicals of potential concern.

TABLE 1
NON-CARCINOGENIC TOXIC ENDPOINTS FOR CHEMICALS OF CONCERN WITH RSLs BASED ON USEPA RfCs

Compound of Interest	Toxic Endpoint for Reference Concentrations Used to Derive USEPA RSLs for Air
1,1-Dichloroethene	Liver toxicity
trans-1,2-Dichloroethene	Liver toxicity; Respiratory toxicity
Isopropylbenzene	Kidney toxicity; Adrenal toxicity
Toluene	Neurotoxicity
1,1,1-Trichloroethane	Liver toxicity; Neurobehavioral toxicity
Xylenes	Neurotoxicity; Respiratory toxicity

The following table lists the toxic endpoints and the chemicals that share each toxic endpoint. There are two toxic endpoints that three chemicals share, and there is one toxic endpoint that two chemicals share.

TABLE 2
SHARED TOXIC ENDPOINTS FOR CHEMICALS OF POTENTIAL CONCERN

Toxic Endpoint Associated With USEPA RfC	Chemicals of Potential Concern Sharing Individual Toxic Endpoints
Renal Toxicity (Kidney Toxicity)	Isopropylbenzene
Respiratory Toxicity	trans-1,2-Dichloroethene, Xylenes
Liver Toxicity (Hepaotoxicity)	1,1-Dichloroethene, 1,1,1-Trichloroethane, trans-1,2-Dichloroethene
Neurotoxicity	Toluene, 1,1,1-Trichloroethane, Xylenes,
Adrenal Toxicity	Isopropylbenzene

To determine the manner in which to set RSLs for each toxic endpoint that does not exceed a Hazard Quotient for that endpoint, the following table lists the governing endpoint for each of the potential chemicals of concern. The governing endpoint is the one with the most shared chemicals. As noted in the following table, five chemicals could have their RSL based on an HQ of 1.0 reduced by RSL/3.

TABLE 3
NUMBERS OF CHEMICALS OF POTENTIAL CONCERN SHARING TOXIC ENDPOINTS

Compound of Interest	Governing Toxic Endpoint	Number of Shared Endpoints
Toluene	Neurotoxicity	3
1,1,1-Trichloroethane	Neurotoxicity, Liver Toxicity (Hepatotoxicity)	3
o-Xylenes, m,p-Xylenes, Total Xylenes	Neurotoxicity	3
trans-1,2-Dichloroethene	Liver Toxicity (Hepatotoxicity)	3
1,1-Dichloroethene	Liver Toxicity (Hepaotoxicity)	3
Isopropylbenzene	Renal Toxicity (Kidney Toxicity), Adrenal Toxicity	1

The following table lists the chemicals of potential concern and their proposed screening levels, as reported by USEPA (2009)[2] for carcinogens and adjusted by shared toxic endpoints for non-carcinogens as noted above. Non-carcinogens are highlighted in bold.

TABLE 4
LIST OF PROPOSED SCREENING LEVELS FOR ALL CHEMICALS OF POTENTIAL CONCERN

Constituent	Proposed Screening Level (µg/m3)[a]	Endpoint
1,1,1-Trichloroethane	**7.3E+03**	**n[b]**
1,1-Dichloroethane	7.7E+00	c
1,1-Dichloroethene	**2.9E+02**	**n[b]**
1,2-Dibromoethane	2.0E-02	c
1,2-Dichloroethane	4.7E-01	c
1,3-Butadiene	4.1E-01	c
Benzene	1.6E+00	c
Bromoform	1.1E+01	c
Carbon tetrachloride	8.2E-01	c
Chloroform	5.3E-01	c
cis-1,2-Dichloroethene	NA	NA
Ethylbenzene	4.9E+00	c
Isopropylbenzene	**1.8E+03**	**n[c]**
m,p-Xylene	**1.0E+03**	**n[b]**
Methylene chloride	2.6E+01	c

[2] *USEPA, 2009. Regional Screening Level (RSL) Master Table. December 2009. http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm.*

TABLE 4
LIST OF PROPOSED SCREENING LEVELS FOR ALL CHEMICALS OF POTENTIAL CONCERN

Constituent	Proposed Screening Level (µg/m3)[a]	Endpoint
Naphthalene	3.6E-01	c
o-Xylene	**1.0E+03**	**n[b]**
Tetrachloroethene	2.1E+00	c
Toluene	**7.3E+03**	**n[b]**
trans-1,2-Dichloroethene	**8.7E+01**	**n[b]**
trans-1,3-Dichloropropene	3.1E+00	c
Trichloroethene	6.1E+00	c
Vinyl chloride	2.8E+00	c
MTBE	4.7E+01	c

Notes:
$\mu g/m^3$ = micrograms per cubic meter
c = carcinogenic
n = non-carcinogenic
NA = value not available
[a] Based on USEPA (December 2009) Industrial RSLs; levels based on non-carcinogenic endpoints are adjusted as described in the text
[b] RSL/3
[c] RSL/1

RSLs based on carcinogenic effects are based on an exposure period of 8 hours per day, 5 days per week, 250 days per year, and 25 years plus a target excess lifetime cancer risk of $1x10^{-6}$. Industrial RSLs are appropriate for this site given its current and reasonably foreseeable future land use.

UniFirst also disagrees that indoor air sample results should be compared to generic RSLs based on an excess incremental cancer risk of $1x10^{-6}$. According to the RSL Users Manual, USEPA's residual risk policy requires that site residual cancer risks must not exceed $1x10^{-4}$. Specifically, USEPA states: "Site specific SLs based upon a cancer risk greater than 10^{-6} can be calculated and may be appropriate based upon site specific considerations. However, caution is recommended to ensure that cumulative cancer risk for all actual and potential carcinogenic contaminants found at the site does not have a residual (after site cleanup, or when it has been determined that no site cleanup is required) cancer risk exceeding 10^{-4}." Thus, basing an RSL for an individual chemical on an excess incremental cancer risk of $1x10^{-6}$ essentially assumes that 100 constituents are all present and contributing significantly to total site risk when the residual risk goal is $1x10^{-4}$ cancer risk. If the residual risk goal were $1x10^{-5}$, basing an RSL for an individual chemical on an excess incremental cancer risk of $1x10^{-6}$ essentially assumes that 10 constituents are all present and contributing significantly to total site risk. It is highly unlikely that 10-100 substances classified as carcinogenic or potentially carcinogenic will be detected in the indoor air in the UniFirst building.

UniFirst understands that the use of $1x10^{-6}$-based generic RSLs is for screening purposes. Exceedance of these generic values does not indicate that a condition of significant risk exists at a site or that site remediation is necessary. Specifically, the Regional Screening Table, User's Guide (USEPA, 2009) states:

> ***It should be emphasized that SLs are not cleanup standards.*** *SLs should not be used as cleanup levels for a CERCLA site until the other remedy selections identified in the relevant portions of the National Contingency Plan (NCP), 40 CFR Part 300, have been evaluated and considered. PRGs is a term used to describe a project team's early and evolving identification of possible remedial goals. PRGs may be initially identified early in the Remedial Investigation/ Feasibility Study (RI/FS) process (e.g., at RI scoping) to select appropriate detection limits for RI sampling. Typically, it is necessary for PRGs to be more generic early in the process and to become more refined and site-specific as data collection and assessment progress. The SLs identified on this website are likely to serve as PRGs early in the process--e.g., at RI scoping and at screening of chemicals of potential concern (COPCs) for the baseline risk assessment. However, once the baseline risk assessment has been performed, PRGs can be derived from the calculator using site-specific risks, and the SLs in the Generic Tables are less likely to apply. PRGs developed in the FS will usually be based on site-specific risks and Applicable or Relevant and Appropriate Requirements (ARARs) and not on generic SLs.*

UniFirst thus proposes that the results of indoor air sampling should be compared to site-specific RSLs that are calculated using the actual number of substances detected in indoor air that are classified as carcinogenic or potentially carcinogenic. Two sets of criteria for total residual risk of $1x10^{-5}$ and $1x10^{-4}$ can be derived and used in the report tables to provide additional useful information for risk managers. If USEPA insists that site data be compared to $1x10^{-6}$-based generic RSLs, then UniFirst recommends that this be one of several comparisons. In addition to comparing site data to the generic RSLs based on $1x10^{-6}$ excess cancer risk, UniFirst would also compare site data to $1x10^{-5}$ and $1x10^{-4}$–based criteria taking into account the actual number of detected chemical constituents. This would provide risk managers with more complete information concerning the implications of any detected chemicals.

In addition to the indoor air VI screening criteria, Comment 33 presents in tabular format a set of groundwater VI screening criteria. No reference is provided for these criteria, but UniFirst has confirmed that they are neither listed in the USEPA RSL table referred to elsewhere in the comments nor in the OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance) (USEPA, 2002). They do not appear to have been published anywhere by USEPA for internal or external peer review. As such, the methods and procedures for deriving them are not available to UniFirst for evaluation and comment. UniFirst objects to the suggestion that undocumented screening criteria that have neither been explained nor subjected to internal or external peer review should apply to this work plan.

COMMENT 34: Page 13, Section 6.0. In Section 6.0, the last paragraph indicates validated data will be used to evaluate the current risk exposure using a commercial worker standard consistent with relevant USEPA guidance. EPA will make the final determination regarding current and future unacceptable risks at the source area property. All validated data shall also be provided to the EPA in excel/ access data base form (form 1 electronic tables).

RESPONSE: Validated data will be provided to USEPA in Excel/Access database format.

COMMENT 35: Page 13, Section 6.0. Please include a Quality Assurance Project Plan (QAPP) and relevant Standard Operating Procedures for the scope of work.

RESPONSE: A QAPP and relevant SOPs are included with the attached Revised IAQA/VI SOW.

COMMENT 36: Page 13, Section 7.0. As indicated in EPA's September 18, 2009 email to Tim Cosgrave, it is anticipated that multiple rounds of sampling may be necessary due to considerable seasonal variability with soil gas, indoor air and groundwater results. The initial sub-slab soil gas, indoor air and shallow groundwater samples should be collected in February 2010 while the ground is frozen during winter conditions and around August 2010 during summer conditions. Shallow groundwater level measurements and sampling shall occur within a few weeks after the sub-slab and indoor air sampling has been completed.

RESPONSE: A Revised IAQA/VI SOW and IAQA/VI Sampling QAPP are attached. As soon as these have been approved, The Johnson Company will work with USEPA to arrange for the on-site inspection and sampling. Scheduling of water-level measurements and groundwater sampling of on-Property wells will be coordinated with work to be conducted under the Revised VIA Work Plan and the annual groundwater monitoring plan. If the first IAQA/VI sampling event is conducted in March 2010, UniFirst anticipates conducting the second round of IAQA/VI sampling in August 2010 to evaluate summer conditions. If USEPA requests significant revisions be made to the Revised IAQA/VI SOW or IAQA/VI Sampling QAPP, or if delays otherwise occur in the process of reaching agreement on the pre-sampling deliverables, then it may not be possible to complete the IAQA/VI assessment under frozen ground conditions this year.

COMMENT 37: Page 13, Section 7. Please coordinate directly with EPA and its oversight contractor, TRC, regarding the field schedule of all activities including assessment of existing monitoring wells and evaluating the conditions inside the building (prior to the initiation of field work).

RESPONSE: USEPA will be kept informed of the field work schedule related to IAQA/VI activities. An expedited schedule showing target dates for IAQA/VI field activities is included as Table 3 of the attached Revised IAQA/VI SOW.

Sincerely yours,

THE JOHNSON COMPANY, INC.

By:_____
Michael B. Moore, P.G.
Vice President/Senior Hydrogeologist

and

ARCADIS

By:_____
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